
(Slip Opinion)

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**BEFORE THE ENVIRONMENTAL APPEALS BOARD
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C.**

In re:

Steel Dynamics, Inc.

Permit No. CP-183-10097-00030

Signif. Mod. No. CP-183-12692-00030

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) PSD Appeal No. 01-03
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[Decided April 23, 2001]

ORDER DENYING REVIEW

***Before Environmental Appeals Judges Scott C. Fulton,
Ronald L. McCallum, and Kathie A. Stein.***

STEEL DYNAMICS, INC.

PSD Appeal No. 01-03

ORDER DENYING REVIEW

Decided April 23, 2001

Syllabus

This decision addresses a petition for review challenging a modified prevention of significant deterioration ("PSD") permit issued by the Indiana Department of Environmental Management ("IDEM") to Steel Dynamics, Inc. ("SDI"), a corporation that plans to construct a new steel beam mill in Whitley County, Indiana. This is the second time an IDEM PSD permit decision for the proposed SDI mill has come before the Environmental Appeals Board. In response to the first round of petitions, which were filed by the United Association of Plumbers and Steamfitters, Local Union 166 and Citizens Organized Watch, Inc. ("COW"), the Board issued a decision that denied review of many issues raised on appeal but remanded IDEM's permit decision on three grounds: (1) calculation of SDI's potential to emit lead; (2) cost-effectiveness analysis for selective catalytic reduction ("SCR") technology to control nitrogen oxide ("NO_x") emissions from the reheat furnace; and (3) form of the best available control technology emissions limits for NO_x and carbon monoxide ("CO") emissions from the electric arc furnace ("EAF"). *See In re Steel Dynamics, Inc.*, PSD Appeal Nos. 99-4 & 99-5 (EAB, June 22, 2000), 9 E.A.D. _____. IDEM completed the remand proceedings on January 10, 2001, issuing on that date a "significant modification" to the PSD permit for SDI's proposed steel mill. Among the modifications to the earlier permit were new controls to limit lead emissions and new limits on NO_x and CO emissions. Notwithstanding these changes, on February 12, 2001, COW filed this appeal.

COW challenges IDEM's revised analysis of the mill's potential to emit lead, its revised cost-effectiveness analysis for SCR, and the extension, to 365 days from startup, of the interim compliance testing deadline for NO_x emissions from the EAF. COW also contends that IDEM abused its discretion by inadequately addressing substantive comments in the public record for this permit.

Held: Review is denied on all grounds. With respect to the lead issues, COW failed to identify clear error or any other reason for the Board to grant review on these grounds. IDEM gathered new stack test data from a number of similar steel mills and used that data to estimate SDI's potential to emit ("PTE"). COW argues that IDEM should have relied on EAF data in a 1993 Research Triangle Institute report to estimate PTE, and/or on several other alternative data sets, but the Board finds that IDEM had, in accordance with the PSD permitting regulations and guidance, reasonably considered all

available information and based its decision on the information it deemed most accurate. The Board finds no clear error in IDEM's decision to average the emissions factors from five existing mills to calculate SDI's PTE, as averaging of this kind is specifically contemplated by EPA guidance. The Board also determines that because SDI's PTE naturally falls below the PSD significance level of 0.6 tons per year, COW's assertion that the permit's lead-related limits and conditions are not practically enforceable is irrelevant to this proceeding.

With respect to the SCR cost-effectiveness issues, COW failed to identify clear error or any other reason for the Board to grant review of IDEM's analysis. COW argues that IDEM did not sufficiently consider the allegedly successful operation of SCR and selective noncatalytic reduction technologies at the Corus steel mill in the Netherlands and the Avesta Sheffield steel mill in Sweden. The Board finds otherwise, noting that IDEM identified and documented in the record a number of differences between the SDI and European mills, which led IDEM to conclude that their cost-effectiveness values could not reasonably be compared. In response to COW's charge that IDEM should have considered SCR costs at various NO_x removal efficiency levels, rather than just at 80% removal efficiency, the Board finds no defect in IDEM's technical judgment, noting that, in any event, COW failed to show how consideration of less-effective control levels would have led to a positive economic feasibility determination for SCR. The Board also finds no fault in IDEM's handling of vendor bid information or in its treatment of a Nucor Steel consent decree that calls for installation of SCR on a pilot project basis.

With respect to the interim NO_x compliance testing deadline being extended from 180 to 365 days, the Board finds no legal authority barring such an extension and holds that COW merely repeated comments rather than identified clear error in IDEM's treatment of this issue, thus failing to properly present the issue for review. Finally, with respect to COW's concerns about the public participation process for this permit, the Board finds no clear error therein. Instead, the Board catalogues the many positive changes made in the permit in response to the Board's remand, reflecting the fact that public involvement has had a significant impact on the terms of SDI's permit.

***Before Environmental Appeals Judges Scott C. Fulton,
Ronald L. McCallum, and Kathie A. Stein.***

Opinion of the Board by Judge Fulton:

I. BACKGROUND

On September 2, 1998, Steel Dynamics, Inc. ("SDI") filed an application with the Indiana Department of Environmental Management ("IDEM") for permission to construct a new steel beam mill in Whitley County, Indiana. The proposed mill will consist of two electric arc

furnaces (“EAFs”), a ladle metallurgy refining station, various natural gas-fired preheaters and dryers, a continuous caster, a reheat furnace, a slag-handling and -processing area, storage silos, a cooling tower, and associated equipment and transportation facilities. SDI plans to recycle more than one million tons of scrap steel each year at the mill by melting the scrap and molding it into new structural steel beams in a wide variety of shapes and sizes, for use in the construction and railroad industries. The mill is expected to produce molten steel at a maximum rate of 200 tons per hour.

IDEM is a state agency with delegated authority to issue federal prevention of significant deterioration (“PSD”) permits pursuant to the Clean Air Act (“CAA”) § 165, 42 U.S.C. § 7475, and a 1981 delegation agreement with Region V of the U.S. Environmental Protection Agency (“EPA” or “Agency”). *See* 40 C.F.R. § 52.21(u); 46 Fed. Reg. 9580, 9583-84 (Jan. 29, 1981). IDEM originally issued a PSD permit to SDI on July 7, 1999, authorizing the company to proceed with construction of its proposed mill, but the effective date of that permit was stayed pending resolution of two petitions for review filed with the Environmental Appeals Board (“Board”) in August 1999. The two petitioners in that case -- the United Association of Plumbers and Steamfitters, Local Union 166 (“Union”) and Citizens Organized Watch, Inc. (“COW”) -- submitted extensive briefs and exhibits regarding the matter, as did EPA (which challenged several conditions of the permit), IDEM, and SDI. On June 22, 2000, the Board issued an order denying review of most of the issues raised in the appeals, but also remanding IDEM’s permit decision for further consideration on three issues. *See In re Steel Dynamics, Inc.*, PSD Appeal Nos. 99-4 & 99-5 (EAB, June 22, 2000), 9 E.A.D. ____ (“*SDI I*”). Those three issues involved: (1) IDEM’s analysis of the condensible fraction of lead emissions and the Union’s alternative calculation of SDI’s potential to emit (“PTE”) lead (which was derived from data in a Research Triangle Institute study on EAFs); (2) the cost-effectiveness analysis for selective catalytic reduction (“SCR”) technology to control nitrogen oxide (“NO_x”) emissions from the reheat furnace, including cost comparisons to other facilities and technologies; and (3) the form of the best available control technology

("BACT") emissions limits for NO_x and carbon monoxide ("CO") emissions from the EAFs.

In response to the Board's order, IDEM collected and evaluated more information regarding the three remanded issues. On September 29, 2000, IDEM published a proposed modification to the original PSD permit for SDI's mill and began accepting public comments thereon. IDEM subsequently held a public hearing in Whitley County, Indiana, on October 30, 2000, and the public comment period on the permit modification closed on November 6, 2000. On January 10, 2001, IDEM completed the remand proceedings by issuing a new permit decision for the SDI facility. The new permit, titled a "significant modification," differs in substantial respects from the original PSD permit, requiring a number of new controls in response to the issues remanded by the Board. Most significantly, the configuration of the mill's meltshop has changed entirely as a result of public concern regarding lead emissions, as have the testing protocols, conditions, and other limits relating to lead. Under the new permit, SDI must (1) totally enclose the meltshop (i.e., the two EAFs, ladle metallurgy station, and continuous caster), with all emissions routed to one baghouse; (2) install a segmented canopy hood, scavenger ducting, cross-draft partitions, and a continuous bag leak detection system; (3) comply with a lower limit on lead emissions from the meltshop baghouse (0.114 lbs/hour); (4) sample baghouse dust monthly and analyze the samples' lead content, which may not exceed five percent; (5) perform annual stack tests for lead using EPA's Method 12; and (6) monitor and remove from the scrap steel input stream any scrap containing excessive amounts of lead-based paint. *See* PSD Significant Modification No. CP-183-12692-00030 §§ A.2(a), D.1, D.1.6(c)-(e), D.1.11(a)-(b), D.1.15(d), (f), D.1.20, D.1.24 & attach. B (Jan. 10, 2001) ("Permit"). Moreover, in response to the remand, IDEM added a new limit on the amount of NO_x and CO that can lawfully be emitted for each ton of steel produced, which will ensure that emissions are controlled regardless of the production rate or operational conditions at the facility. *Id.* §§ D.1.2(a)-(b), D.1.8.

On February 12, 2001, COW filed a petition for review of the modified PSD permit, which is now before the Board. *See* COW's

Petition for Review of PSD Permit Significant Modification and for Stay of Effectiveness (“COW Pet’n”). SDI and IDEM filed responses to COW’s petition on March 13, 2001, and March 27, 2001, respectively. *See* IDEM’s Response to Petition for Review (“IDEM Resp.”); SDI’s Response to Petition for Review (“SDI Resp.”). On April 2, 2001, EPA’s Office of General Counsel and Office of Regional Counsel for Region V (collectively, “Amici”) filed a motion for leave to file a response to the petition, which the Board granted. *See* Amicus Brief of EPA Region V & EPA Office of Air & Radiation (“Amicus Br.”). For the reasons set forth below, the Board denies further review of the permit.

II. DISCUSSION

A. Standards for Review

The EPA procedures for issuing or modifying a PSD permit provide that “any person who filed comments on [a] draft permit or participated in the public hearing [on that permit] may petition the Environmental Appeals Board to review any condition of the permit decision.” 40 C.F.R. § 124.19(a) (2000). A petitioner must clearly demonstrate that each issue raised in the petition was previously raised during the public comment period or was not readily ascertainable at that time. *Id.* § 124.13; *In re Sutter Power Plant*, PSD Appeal Nos. 99-6 & 99-73, slip op. at 9 & n.8 (EAB, Dec. 2, 1999), 8 E.A.D. _____. For the Board to grant review of a permit, the petitioner must show that the permit condition in question is based on: (1) a finding of fact or conclusion of law that is clearly erroneous; or (2) an exercise of discretion or an important policy consideration that the Board should, in its discretion, review. 40 C.F.R. § 124.19(a); *Sutter*, slip op. at 9, 8 E.A.D. ____; *In re P.R. Elec. Power Auth.*, 6 E.A.D. 253, 255 (EAB 1995). As we have repeatedly held, this standard of review

is applied stringently in practice, in keeping with the directive in the preamble to section 124.19 that the “power of review should be only sparingly exercised” and “most permit conditions should be finally

determined at the [permitting authority] level.” 45 Fed. Reg. 33,290, 33,412 (May 19, 1980). Thus, it is infrequent that the Board will grant review in a permit appeal. The Board exercises this authority only when the petitions for review and the administrative record are abundantly persuasive that the Board’s active involvement in the matter is warranted.

In re Knauf Fiber Glass, GmbH, PSD Appeal Nos. 99-8 to -72, slip. op. at 9 (EAB, Mar. 14, 2000), 8 E.A.D. ____ (“*Knauf II*”); *accord Sutter*, slip op. at 10, 8 E.A.D. ____; *In re Maui Elec. Co.*, PSD Appeal No. 98-2, slip op. at 8-9 (EAB, Sept. 10, 1998), 8 E.A.D. ____.

In complying with these requirements, petitioners must include specific information in support of their allegations. It is not sufficient simply to repeat objections made during the comment period; instead, a petitioner “must demonstrate why the [permit issuer’s] response to those objections (the [permit issuer’s] basis for its decision) is clearly erroneous or otherwise warrants review.” *In re LCP Chems.*, 4 E.A.D. 661, 664 (EAB 1993); *accord SDI I*, slip op. at 89, 9 E.A.D. ____ (“[w]e have repeatedly held that where petitions merely restate previously submitted comments without indicating why the permit agency’s responses thereto were clearly erroneous or otherwise warranted review, review will be denied”); *In re Encogen Cogeneration Facility*, PSD Appeal Nos. 98-22 to -24, slip op. at 10-21 (EAB, Mar. 26, 1999), 8 E.A.D. ____; *In re SEI Birchwood, Inc.*, 5 E.A.D. 25, 27 (EAB 1994). The burden of demonstrating that review is warranted rests with the petitioner. *See* 40 C.F.R. § 124.19(a); *In re AES P.R. L.P.*, PSD Appeal Nos. 98-29 to -31, slip op. at 6 (EAB, May 27, 1999), 8 E.A.D. ____, *aff’d sub nom. Sur Contra La Contaminacion v. EPA*, 202 F.3d 443 (1st Cir. 2000); *In re Haw. Elec. Co.*, PSD Appeal Nos. 97-15 to -23, slip op. at 8 (EAB, Nov. 25, 1998), 8 E.A.D. ____; *In re Commonwealth Chesapeake Corp.*, 6 E.A.D. 764, 769 (EAB 1997).

B. COW's Arguments

COW challenges IDEM's treatment of each of the three remanded issues, raising a number of arguments particularly with respect to IDEM's potential to emit lead and SCR cost-effectiveness analyses. COW also argues that IDEM abused its discretion by inadequately addressing substantive comments in the public record for this permit. Each of COW's contentions will be addressed in turn below.

1. Potential to Emit Lead

In *SDI I*, the Board found IDEM's analysis of the proposed mill's potential to emit lead to be clearly erroneous and therefore remanded that portion of the permit decision for reconsideration. We directed IDEM to provide in the administrative record a clear rationale for its treatment of the condensible fraction of lead and to consider the Union's alternative calculation, derived from a 1993 Research Triangle Institute study of EAFs at steel mills across the country (the "RTI Report"), that SDI's mill had a potential to emit lead of 4.03 tons per year ("tpy"). *See SDI I*, slip op. at 14-23, 9 E.A.D. ____.

Upon reconsideration, IDEM discovered a mathematical error in its condensible lead emissions estimate and also acknowledged the difficulties inherent in attempting to translate particulate emissions data into filterable and condensible lead emissions estimates. *See IDEM*, Technical Support Document, Response to June 22, 2000 Remand of PSD Permit Issued to Steel Dynamics, Inc. 7-8 (Sept. 29, 2000) ("TSD") (stack test information "provides a more accurate representation of the lead emissions from the meltshop operations than calculated lead emissions estimates and eliminates the need for any assumptions on the amount of lead, if any, present in the condensible fraction"). IDEM gathered further information -- specifically, actual stack test data collected using EPA's Method 12, which measures both filterable and condensible lead emissions -- from a number of other steel mills across the country. *Id.* at 8-10; *see* 40 C.F.R. pt. 60, app. A (Method 12 -- Determination of Inorganic Lead Emissions from Stationary Sources). IDEM used that data to conclude that SDI's mill has a potential to emit

0.432 tons of lead annually, which falls below the PSD significance threshold for lead (i.e., 0.6 tpy) that would trigger BACT review. *See* IDEM, Addendum to the Technical Support Document, Response to June 22, 2000 Remand of PSD Permit Issued to Steel Dynamics, Inc. 3-8 (Jan. 10, 2001) (“ATSD”); TSD at 8-11. IDEM also explicitly reviewed the Union’s potential-to-emit estimate and rejected the RTI Report data set on which the estimate was based because, in IDEM’s view, there were too many unknown factors about the source tests in the Report (such as stack test and lead measurement methods used, production rates during testing, permit conditions, compliance status, or control device design information) to draw reasoned conclusions therefrom about SDI’s potential lead emissions. ATSD at 8-13; TSD at 12-15.

Despite finding that the proposed mill’s potential to emit lead fell beneath the BACT significance level, IDEM incorporated a number of significant changes in the permit in response to continuing public concerns about potential lead emissions. Under the new permit, SDI must totally enclose the meltshop, which consists of the two EAFs, the ladle metallurgy station, and the continuous caster. *See* Permit §§ D.1.6(c), D.1.24. Inside the meltshop, SDI must install a segmented canopy hood, scavenger ducting, and cross-draft partitions, which are designed to capture fugitive particulate matter (including lead), as well as a continuous bag leak detection system, which will identify any breaches in the integrity of the baghouse components. *Id.* §§ A.2(a), D.1, D.1.6(d)-(e), D.1.20. The new permit also: (1) reduces the limit on lead emitted by the meltshop/EAF baghouse from less than 0.134 lbs/hour to less than 0.114 lbs/hour, *id.* § D.1.11(a); (2) requires that baghouse dust be sampled monthly and analyzed for lead content, which may not exceed five percent by weight, *id.* §§ D.1.11(b), D.1.15(f); (3) specifies that the annual stack tests for lead using EPA’s Method 12 must be conducted using method detection levels that are less than the emissions limit of 0.114 lbs/hour, *id.* § D.1.15(d); and (4) mandates that any steel scrap coming into the mill with excessive amounts of lead-based paint on it must be removed from the input stream or the entire load of scrap rejected. *Id.* attach. B (Scrap Management Plan). According to IDEM, while it was not required under the PSD program to ensure enforceability of lead limits because SDI’s potential to emit falls under the PSD

threshold for major sources of lead, the permit limits on lead emissions are nonetheless federally enforceable and enforceable as a practical matter. *See* TSD at 11; ATSD at 15-16; *see also* 40 C.F.R. § 52.21(b)(4).

COW challenges IDEM's treatment of the lead issue on the following grounds.

a. Arkansas Steel and RTI Report Data

COW contends that in analyzing SDI's potential to emit lead, IDEM erroneously excluded the lead emission factor (in pounds of lead per ton of steel) calculated for Arkansas Steel's Newport, Arkansas mill, which was extrapolated from baghouse dust testing. COW Pet'n at 4-6. According to COW, EPA guidance set forth in the draft New Source Review Workshop Manual specifies that the "worst-case" uncontrolled emission rate must be "measured, calculated, or estimated in some way." *Id.* at 4-5; *see* U.S. EPA, Office of Air Quality Planning & Standards, *New Source Review Workshop Manual*, at A.19 (draft Oct. 1990) ("*NSR Manual*"). COW believes that Arkansas Steel represents the worst-case situation and thus should have been used, by itself, to determine SDI's potential to emit.¹ COW Pet'n at 5. COW argues that IDEM's rationale for rejecting the Arkansas Steel emission factor -- i.e., because it was not based on a direct, Method 12 measurement of the lead emissions from the stack -- contravenes the *NSR Manual* guidance calling for measurement, calculation, or estimation, in some way, of the worst-case emissions rate. *Id.* at 5; *see* ATSD at 6.

COW complains further that IDEM's criticisms of the RTI Report data (i.e., that stack test methods, lead measurement methods, and production rates during testing were not specified, and that no information on permit conditions or compliance status with applicable limits were provided) were unfounded because Dr. J. Phyllis Fox, the Union's expert, provided answers to each of IDEM's concerns. COW

¹ If so used, the potential to emit, COW claims, is 5.61 tpy, well in excess of the significance threshold of 0.6 tpy and thus allegedly triggering BACT review for lead. COW Pet'n at 5-6.

Pet'n at 6. Specifically, COW states that according to Dr. Fox, "the stack test and analytical methods [used for the RTI Report source tests] were EPA Method 28, rated capacity was used to calculate emissions, and high quality data can be presumed as the source tests were relied on by EPA for delisting the EAF source category." *Id.* (citing Dr. Fox's Nov. 6, 2000 Comments, at I.F.2 & ex. 8). Thus, COW concludes that IDEM failed to consider adequately the RTI Report data, as required by the Board's remand, and that if it had done so, it would have determined that a BACT analysis must be conducted for lead emissions from SDI's proposed steel mill. *Id.*

In response, IDEM asserts that it did, in fact, consider the Arkansas Steel emission data and discovered, as Dr. Fox herself had pointed out, that the reported results were only for filterable, and not also condensible, lead. IDEM Resp. at 4. IDEM took to heart the need, identified by Dr. Fox, to find data that were representative of total lead emissions rather than simply filterable emissions, and thus it collected the Method 12 stack tests mentioned above from a number of reasonably similar steel mills. *Id.* IDEM notes that Dr. Fox herself had argued that source test data are more accurate than baghouse dust analysis data for estimating lead emissions and suggests, therefore, that there should be no question but that IDEM chose superior data with which to estimate SDI's potential to emit. *Id.* at 5. As for the RTI data and its criticisms thereof, IDEM claims that it attempted to obtain the missing information from RTI and EPA but was told the information was unavailable. *Id.* at 6 n.5. IDEM states further that some of the source tests in the RTI Report were actually conducted using EPA Method 29 (not Method 28), while others were derived using EAF baghouse dust analyses. *Id.* at 6 n.6; *see* 40 C.F.R. pt. 60, app. A (Method 29 -- Determination of Metals Emissions from Stationary Sources). IDEM also states that Dr. Fox used RTI Report data from sources that were not similar in design to SDI's proposed mill and also used sources that did not appear to be as well-controlled as the SDI facility. IDEM Resp. at 6 (citing ATSD at 12). In view of these shortcomings, IDEM saw the RTI data as highly variable and unreliable as benchmarks for SDI's mill. IDEM concludes that COW has failed to show that it erred in deciding to exclude from the

potential-to-emit calculus the Arkansas Steel and RTI Report data. *Id.* at 7.

SDI weighs in on these issues by pointing out that COW failed to explain how Arkansas Steel is similar to or representative of the proposed SDI mill, noting that Arkansas Steel “is not listed as having any of the lead controls that SDI must install.” SDI Resp. at 15. Because the *NSR Manual* suggests that a potential-to-emit estimate “should be based on the most representative data available,” *NSR Manual* app. C, at 2, SDI contends that there is no clear error where, as here, IDEM evaluated data from many different mills and used the best information available to it. SDI Resp. at 15. According to SDI, “data selection [and technical analysis] fall[] within the discretion of the permitting agency,” and “COW cannot merely criticize IDEM’s data selection or analysis, but rather must prove that these technical choices were clearly erroneous, violated its authority, or resulted in the issuance of an invalid permit.” *Id.* at 14 (citations omitted).

We agree with IDEM and SDI that COW has not shown, with sufficient force and clarity, that IDEM clearly erred in choosing to focus on the Method 12 data it had gathered rather than the data COW now favors. Nor do we find any reason in this instance to exercise our discretion to review IDEM’s approach to this issue. The *NSR Manual* cannot be used, as COW contends, to compel the use of a particular data point. Rather, the permit agency has the discretion to choose the most representative, most reliable data from the data available. *See, e.g., In re Encogen Cogeneration Facility*, PSD Appeal Nos. 98-22 to -24, slip op. at 16-17 (EAB, Mar. 26, 1999), 8 E.A.D. ____ (choice of data sets largely left to discretion of permit authority); *In re Knauf Fiber Glass, GmbH*, PSD Appeal Nos. 98-3 to -20, slip op. at 35 (EAB, Feb. 4, 1999), 8 E.A.D. ____ (“*Knauf I*”) (same); *In re Inter-Power of N.Y., Inc.*, 5 E.A.D. 130, 147 (EAB 1994) (“[p]ermit issuers must be free to exercise expert judgment and rely on data they conclude are more accurate or comprehensive”). IDEM reviewed the Arkansas Steel data and explained in the record that: (1) Dr. Fox had pointed out that the data represented filterable lead emissions only, not total lead emissions; and (2) the data were derived by analyzing EAF baghouse dust rather than by

directly measuring stack emissions using EPA's Method 12. *See* ATSD at 6. In light of this information, and in view of the careful explanation and documentation of the basis for IDEM's decision in the record, we find that it was neither unreasonable nor erroneous for IDEM to exclude the Arkansas Steel data from its potential-to-emit analysis. *See Encogen*, slip op. at 16-17, 8 E.A.D. ____; *Inter-Power*, 5 E.A.D. at 147. Moreover, IDEM's concerns about the missing information for the RTI source tests were legitimate concerns, and its decision to favor the certainty of Method 12 stack tests over the incomplete and highly variable RTI source tests was neither unreasonable nor erroneous. In our view, IDEM adequately considered the RTI Report data, as mandated by our earlier remand, *see* ATSD at 8-13; TSD at 12-15, and we see no reason to remand on this ground again. IDEM's approach to these technical issues comported with the PSD permitting regulations and guidance, and COW failed to show that its objections are supported by those authorities. Review is therefore denied. *See, e.g., In re NE Hub Partners, L.P.*, 7 E.A.D. 561, 567 (EAB 1998) ("Board traditionally assigns a heavy burden to persons seeking review of issues that are quintessentially technical") (quoting *In re Ash Grove Cement Co.*, 7 E.A.D. 387, 403 (EAB 1997)), *appeal denied sub nom. Penn Fuel Gas, Inc. v. U.S. EPA*, 185 F.3d 862 (3d Cir. 1999); *see also* Amicus Br. at 7-10 (arguing that IDEM provided reasonable justification for relying on Method 12 stack tests and for rejecting the Arkansas Steel and RTI data).

b. MACT Standard

In its review of the sixteen RTI Report source tests used by the Union to compute a 4.03 tpy potential-to-emit lead estimate, IDEM singled out the four best-controlled of the sixteen sources and claimed that, when applied to SDI's circumstances, the four sources' emissions factors would yield lead emissions estimates far below the PSD significance level.² TSD at 15. When the Union filed comments questioning IDEM's decision to focus only on the few best-controlled

² The four sources are Charter Steel of Saukville, Wisconsin, Cascade Steel of McMinnville, Oregon, Republic Steel of Canton, Ohio, and Structural Metals of Seguin, Texas. TSD at 15.

sources, IDEM responded by asserting that its method of using the data from only the best-controlled sources is the same method EPA would have used to evaluate the RTI data if the Agency had decided to develop a maximum achievable control technology (“MACT”) standard for the EAF source category. ATSD at 10. COW challenges such reasoning as clearly erroneous.

According to COW, a facility’s potential to emit a pollutant constitutes “the maximum capacity of a stationary source to emit a pollutant under its physical and operational design,” 40 C.F.R. § 52.21(b)(4), and thus must be computed as that facility’s worst-case emission rate. COW Pet’n at 7. A MACT analysis, however, involves determining a best-case emissions rate, *see* Clean Air Act § 112(g)(2), 42 U.S.C. § 7412(g)(2), and therefore, COW argues, IDEM’s MACT-based methodology “does the exact opposite of establishing potential to emit.” COW Pet’n at 7. COW contends that by employing a MACT-like filter to focus only on the best-controlled RTI sources, IDEM improperly screened out legitimate source test data that would have provided a basis for establishing a higher potential to emit. *Id.*

IDEM defends itself by explaining that while it did mention the MACT standard approach in its response to Dr. Fox’s comments,

the real key to IDEM’s approach in its selection of sources is the *similarity* of the sources to the proposed SDI facility (which includes the fact that they are similarly well-controlled), the direct measurement of lead emissions by Method 12 stack testing, and the ability to verify and include the necessary parameters to properly determine an emission factor for SDI’s proposed facility.

IDEM Resp. at 8 (citing ATSD at 6-13). SDI, for its part, takes the position that “COW’s argument assumes too much about IDEM’s MACT calculation, which IDEM performed merely to demonstrate the data’s vulnerability to different interpretations and to provide an alternative basis for IDEM’s actual lead PTE calculation.” SDI Resp. at 16. *Amici*

similarly contend that IDEM did not actually apply this kind of analysis; they refer to IDEM's MACT discussion as "tangential and apparently irrelevant." Amicus Br. at 9 n.6.

We again do not find that COW successfully demonstrated clear error or identified any other reason for us to grant review on this ground. See 40 C.F.R. § 124.19(a). We find IDEM's attempt to draw a MACT analogy to support its rejection of the RTI Report data to be, at worst, harmless error. See, e.g., *In re Chem. Waste Mgmt. of Ind., Inc.*, 6 E.A.D. 144, 163 n.18 (EAB 1995) (where basis for permit decision is included in record, alternate basis for decision that is relied on by permit authority, but not included in record, is harmless error); see also *In re Spokane Reg'l Waste-to-Energy*, 2 E.A.D. 809, 815 (Adm'r 1989). As IDEM explains, it singled out the best-controlled facilities for special scrutiny because they have controls similar to the ones that will be installed in SDI's mill. This strikes us as one legitimate way to delve further into a relevant data set. Moreover, as discussed in the prior section, IDEM judged the RTI source tests to be inferior bellwethers of potential to emit to the Method 12 source tests. Accordingly, COW has failed to convince us that remand is warranted on the basis of this issue.³

³ IDEM also disputes COW's calculation of an average 5.06 tpy total lead emissions for four of the sixteen RTI sources that COW claims have "identical" controls to those now proposed for SDI. See COW Pet'n at 8 (referencing Charter Steel, Saukville, Wisconsin; Florida Steel, Charlotte, North Carolina; Florida Steel, Jackson, Tennessee; and Florida Steel, Tampa, Florida, mills). IDEM notes that it computed a lead emission rate of 0.004 tpy for the Charter Steel mill and that it considers the three Florida Steel mills to be "outliers," or facilities that report statistically significant disparities in their data compared to other similar facilities. IDEM Resp. at 8, 11 & nn.9, 11; see *infra* Part II.B.1.d (discussing outliers). Our role is to examine the record and determine whether the permitting agency selected an approach that "is rational in light of all the information in the record, including the conflicting opinions." *SDI I*, slip op. at 23 n.16, 9 E.A.D. ____ (quoting *In re NE Hub Partners, L.P.*, 7 E.A.D. 561, 568 (EAB 1998), *appeal denied sub nom. Penn Fuel Gas, Inc. v. U.S. EPA*, 185 F.3d 862 (3d Cir. 1999)). In this instance, we find that IDEM adequately considered the panoply of source tests before it and drew supportable, reasonable technical conclusions from them. We therefore deny review on this ground.

c. *Averaging Emissions Rates*

After collecting its new Method 12 stack test data from a number of mills, IDEM averaged the emission factors from five of the mills to calculate SDI's potential to emit. *See* ATSD at 7. COW contends that in determining potential to emit, the concept of averaging test results from several steel mills is fundamentally wrong because "[t]o dilute an otherwise accepted data point by averaging it with other lower emission rates will not generate a maximum potential emission rate," as required by the PSD regulations. COW Pet'n at 9-10 (citing 40 C.F.R. § 52.21(b)(4)). COW argues that IDEM's decision to average the mill data erroneously reduced the projected maximum emission rate, which, from that collection of five sources, was represented by IPSCO Steel of Iowa with an emissions factor of 0.00096 pounds of lead per ton of steel, yielding an SDI potential to emit lead of 0.841 tpy. COW Pet'n at 9-11; ATSD at 7.

IDEM and SDI respond by pointing out that under the *NSR Manual*, averaging is one of several sanctioned ways to compute potential to emit. IDEM Resp. at 9-10 (citing *NSR Manual* at A.22, which in turn cites "AP-42 emissions factors" as one of six different sources of worst-case uncontrolled emissions that may be used in determining potential to emit; IDEM contends that AP-42 emission factors are "averages of all available data of acceptable quality"); SDI Resp. at 17 (citing *NSR Manual* at A.22; Introduction to AP-42 Emission Factors, Vol. I, at 1 (5th ed. 1995)). IDEM also notes that Dr. Fox herself averaged the emission factors for the sixteen sources drawn from the RTI Report. IDEM Resp. at 9 n.11. IDEM professes surprise, in light of COW's heavy reliance on the *NSR Manual* and Dr. Fox's opinions in other matters, that COW would take a position contrary to these authorities. *Id.* at 9-10 & n.11. For its part, SDI asserts that COW's position "not only ignores the widely accepted benefits of averaging multiple data sources, but would allow a single aberrant stack test to cause every new steel mill, regardless of design, to exceed the PSD significance threshold for lead." SDI Resp. at 17.

IDEM and SDI are correct in arguing that averaging emission factors can be an acceptable method of determining a facility's potential to emit. *See NSR Manual* at A.22 (in determining potential to emit, sources of worst-case uncontrolled emissions data may be, among other things, AP-42 emission factors); U.S. EPA, Office of Air Quality, Planning & Standards, I *Compilation of Air Pollutant Emission Factors AP-42: Stationary Point and Area Sources* 1 (5th ed. 1995) (AP-42 emission factors are in most cases "simply averages of all available data of acceptable quality").⁴ Because COW's argument that averaging is per se inappropriate cannot stand, and because COW has failed to demonstrate why the averaging undertaken in this case is unreasonable, we deny review on this ground.

d. RTI Sources with Similar Emissions Controls

COW argues that IDEM should consider four source tests from the RTI Report (Charter Steel, Saukville, Wisconsin; Florida Steel, Charlotte, North Carolina; Florida Steel, Jackson, Tennessee; and Florida Steel, Tampa, Florida) because these four sources are allegedly more similar to the proposed SDI facility in terms of their collection and pollution removal equipment than the five sources chosen (and averaged) by IDEM. COW Pet'n at 11. COW notes that SDI's meltshop will now be totally enclosed, with a 4th-hole evacuation system, canopy hood, and baghouse to capture particulate emissions. According to COW, each of the four sources COW urges on IDEM have these controls, whereas four

⁴ Amici state:

The approach followed by IDEM -- multiplying an average emission factor by a maximum production rate -- is not inconsistent with the method of calculating PTE envisioned in EPA's regulations and guidance. As noted above, a source's potential to emit is the maximum emissions that can be generated during *normal* operations. It is not clear error for emission factors -- used to represent anticipated operations -- to be calculated by averaging emission data from multiple sources.

Amicus Br. at 10 (footnote omitted).

of IDEM's five averaged sources purportedly do not have total building enclosure and therefore, COW contends, are not sufficiently similar to the SDI mill to justify their use in determining potential to emit. *Id.*

IDEM observes that it "explained in great detail its decision to reject the source data presented in the RTI report." IDEM Resp. at 11 (citing ATSD at 6-12). IDEM states further:

While IDEM does mention the Charter Steel emission rate in the ATSD, it is mentioned only as affirmation that a similar source with similar controls can achieve the emission rate established by IDEM for SDI. * * * On the other hand, the Florida Steel emission rates are higher than sources with less efficient control systems. * * * This aberrant result is an indicator that something is wrong with the test data or that the baghouses were poorly functioning. And, as IDEM has stated, the RTI data do[] not give enough information to determine why the Florida Steel facilities are "outliers."

Id. (ATSD citations omitted). SDI supports IDEM's position, arguing that IDEM used more representative data (i.e., the Method 12 stack test data) to determine potential to emit and that COW has not shown IDEM's data selection to be unreasonable. SDI Resp. at 18.

We agree that COW has failed to demonstrate any clear error or other reason for us to grant review of IDEM's lead analysis on this ground. As described above, IDEM has advanced reasonable and legitimate reasons for selecting the Method 12 source tests and rejecting the RTI Report source tests as models for SDI's potential to emit. Review is therefore denied. *See supra* Part II.B.1.a; ATSD at 2-16; TSD at 1-15.

e. Ambient Air Services, Inc. Data

COW asserts that SDI requested potential-to-emit data from Ambient Air Services, Inc. (“AASI”), an allegedly well-respected testing firm that serves the steel industry. COW Pet’n at 12. According to COW, AASI selected data from its files that it believed to be representative of SDI’s lead emissions and estimated a potential-to-emit range of 0.88 to 4.4 tpy. *Id.*; *see id.* ex. 4 (AASI data). COW contends that IDEM erred by overlooking the AASI data in computing SDI’s potential to emit lead. COW Pet’n at 12.

IDEM contends that “[l]ike the RTI data, IDEM considered the AASI data as unreliable due to many unknown variables. The AASI data contains no information as to testing method, control methods, or the level of steel production during testing.” IDEM Resp. at 12. Accordingly, IDEM chose not to mention the AASI data specifically in its response to comments. *Id.* SDI elaborates on IDEM’s position, explaining that AASI sent it potential-to-emit data that were based on what AASI itself characterized as “some quick research” rather than a careful analysis of lead data. SDI Resp. at 18. According to SDI, AASI provided no information on where or when the tests were run or what test methods were used, what level of steel production occurred during testing, or the pollutant controls that were in place, and thus IDEM rightfully rejected the AASI data in favor of its Method 12 stack tests. *Id.* at 18-19. SDI states further that IDEM did not explicitly address the AASI data in the ATSD because it did not deem the information significant enough to merit a response. *Id.* at 19.

COW has failed to demonstrate clear error or any other reason for us to grant review on this ground. In this technical area, we once again defer to IDEM’s judgment that the AASI data were too inconclusive and speculative to warrant substantial consideration. *See, e.g., Encogen*, slip op. at 16-17, 8 E.A.D. ____ (data selection largely left to permit agency’s discretion); *In re Masonite Corp.*, 5 E.A.D. 551, 581 (EAB 1994) (no clear error where permit agency rejects generic data in favor of specific test data); *Inter-Power*, 5 E.A.D. at 147; *see also In re NE Hub Partners, L.P.*, 7 E.A.D. 561, 582-84 (EAB 1998) (permit

agency has no duty to respond to insignificant comments), *appeal denied sub nom. Penn Fuel Gas, Inc. v. U.S. EPA*, 185 F.3d 862 (3d Cir. 1999). Review on this ground is therefore denied.

f. *Sham Permit Limit*

COW argues that the limit imposed on SDI's lead emissions cannot be enforced because the permit lacks specific restrictions on hours of operation or amount of material processed. COW Pet'n at 14-15. This argument has vitality only in conjunction with a determination that SDI's potential to emit lead exceeds the PSD significance threshold, such that, absent an enforceable operational limit, PSD requirements would apply. This permit's approach to lead emissions is not predicated on such a determination. Rather, it rests on IDEM's conclusion that even without an enforceable operational limit, SDI's emissions will fall short of the PSD significance threshold.

We are content that IDEM appropriately analyzed the lead issues and computed a potential lead emissions estimate that is reasonable and supportable on the record before us. Having determined that IDEM did not commit reversible error in concluding that SDI's potential to emit lead does not exceed the PSD significance threshold, we further determine that COW's argument regarding the enforceability of the limit on lead emissions is without force.⁵ Review is thus denied on this ground.

g. *Practical Enforceability*

On a closely related note, COW contends that the 0.114 lbs/hour lead emissions limit and the five percent lead content limit in baghouse dust are not practically enforceable. COW Pet'n at 15-16. In COW's

⁵ As stated by Amici, "COW's claims regarding the unenforceability of the permit's lead limits are not relevant because IDEM does not rely on permit limits, other than the limit on the maximum production rate [i.e., 200 tons of steel per hour, whose enforceability COW does not contest], to limit lead emissions." Amicus Br. at 11.

opinion, none of the conditions in the permit adequately ensures SDI's compliance with the hourly emissions limit.

Because IDEM does not rely on permit limits, other than the maximum production rate limit, to ensure the 0.6 tpy threshold is not exceeded, the practical enforceability of the lead-related requirements highlighted by COW is irrelevant to this proceeding. *See* Amicus Br. at 11; IDEM Resp. at 13. Accordingly, we deny review on this ground.⁶

h. Math Errors

COW points out that IDEM acknowledged making mathematical errors in its potential-to-emit calculus and maintains that when corrected, the IDEM calculation should have yielded a value of 0.741 tpy, which is above the PSD significance threshold of 0.6 tpy and thus triggers BACT review. COW Pet'n at 16 (referencing mathematical calculation in COW Comments at 4-5). COW complains that, rather than correcting its math errors, IDEM simply switched analytical methodologies, abandoning "the accepted methodology for [the PTE] determination and devis[ing]

⁶ For its part, IDEM refers to its prior arguments that the lead emission limit is, in fact, practically enforceable using the parametric monitoring of the baghouse and the baghouse dust analysis/lead percentage limit requirements in the permit. IDEM Resp. at 14-15. It bears noting that the issue of practical enforceability has formed a relatively substantial portion of the arguments raised by parties commenting on and seeking review of the SDI permit. *See, e.g., SDI I*, slip op. at 73-106, 9 E.A.D. ____; COW Pet'n at 13-16; ATSD at 13-16. For instance, commenters raised during the public comment period the precise issue before us now, i.e., that the lead emissions limit is not enforceable as a practical matter. *See* ATSD at 13. To resolve this perceived problem, the Union and/or COW suggested that IDEM incorporate into the permit the following additional requirements: (1) total building enclosure and related controls; (2) monthly monitoring of baghouse dust and lead content limit; (3) scrap quality specifications; (4) annual lead stack testing; (5) a specific detection limit for lead; (6) an averaging time for the lead emission limit; and (7) a baghouse leak detection system. ATSD at 13; *see, e.g.,* COW Comments at 11-12; Union Comments at 15-19. IDEM chose to revise SDI's permit to include virtually all of these items, despite its own belief that the existing proposed permit conditions were practically enforceable in their own right. *See* ATSD at 14; Permit §§ A.2(a), D.1, D.1.6(c)-(e), D.1.11(a)-(b), D.1.15(d), (f), D.1.20, D.1.24 & attach. B.

its own unapproved method to justify its original errant conclusion that a BACT analysis for lead was not required.” *Id.*

IDEM defends its decision to revise its analytical methodology by observing that “COW either neglects to mention or forgets that both COW and the Union earlier advocated the use of direct lead emission source test results [rather than particulate matter source testing combined with baghouse dust analysis] to determine an emission factor for SDI’s potential to emit lead.” IDEM Resp. at 15 (citing original ATSD and Union Reply Brief in *SDI I*). SDI, for its part, reiterates that “IDEM refined its PTE calculation by relying on the best information available -- actual Method 12 stack test results.” SDI Resp. at 20. SDI contends that the Board has affirmed permit decisions that are based on what the agency felt were the best data. *Id.* (citing *In re Inter-Power of N.Y., Inc.*, 5 E.A.D. 130, 147 (EAB 1994) (“[p]ermit issuers must be free to exercise expert judgment and rely on data they conclude are more accurate or comprehensive”)).

COW has not identified any clear error or other legitimate reason for us to grant review of IDEM’s decision to use Method 12 stack test results as the foundation for its analysis. Nothing in the remand prevented IDEM from taking a fresh look at the PTE question, as it has done and documented in the record. Because the analysis upon which the revised permit is based is not subject to the math errors highlighted by COW, we deny review on this ground.

i. *New Fugitives Estimate*

Finally, COW notes that IDEM used a new 0.088 tpy estimate for fugitive emissions of lead in its potential-to-emit calculations. COW Pet’n at 17. When COW plugs this new figure into its PTE calculus, it obtains a potential-to-emit figure of 0.798 tpy of lead, which again exceeds the PSD significance level and, it argues, triggers BACT review. *Id.* Notably, COW does not appear to challenge the 0.088 tpy fugitive emissions estimated used by IDEM; it simply argues that, when added to other lead emissions inputs, the projected fugitive emissions further ensure an exceedance of the 0.6 tpy PSD threshold for lead.

As we have already determined that IDEM's potential lead emissions estimate is supportable on the record before us, and, because that estimate falls comfortably below the PSD threshold even with fugitive emissions factored in, we see no basis for review on this ground. As stated above, IDEM has thoroughly analyzed the lead issues, made significant changes in the permit to accommodate the public's concerns about potential lead emissions, and documented its analyses in the administrative record. In so doing, IDEM has complied with the requirements of the remand, as well as those of the Clean Air Act and implementing regulations and guidance. Review is denied.

2. BACT Analysis for the Reheat Furnace

In *SDI I*, the Board remanded the permit so that IDEM could reconsider its BACT determination for NO_x emissions from the reheat furnace. We determined that IDEM had failed to analyze adequately the cost-effectiveness of selective catalytic reduction ("SCR") technology and thus had clearly erred by rejecting that technology as economically infeasible. We directed IDEM to perform a complete analysis of SCR's cost-effectiveness (including a comparison of costs to other facilities and other technologies), document its findings, submit those findings to public review, and consider and respond to significant public comments in its documentation of the final permit decision. *See SDI I*, slip op. at 62, 9 E.A.D. _____. We ordered IDEM specifically to consider, among other things, the Union's June 30, 1999 comments on this issue and the experiences of five steel mills Amici identified as having anticipated SCR costs of \$3,000 to \$6,000 per ton. *Id.* at 62 & n.52, 9 E.A.D. ____.

On remand, IDEM conducted a thorough review of the costs that would be incurred by SDI if SCR technology were selected as BACT for the reheat furnace. IDEM analyzed the cost-effectiveness of SCR by: (1) comparing the technology's projected costs at SDI's mill to the costs at the five steel mills identified by Amici, as well as to the costs of selective noncatalytic reduction ("SNCR") and SCONOX technologies; and (2) considering the experiences Beta Steel of Portage, Indiana, has had with SCR on its reheat furnace. *See* TSD at 17-21; ATSD at 19-32. In addition, SDI solicited bids from four SCR vendors: (1) Huntington

Environmental Systems (“HES”) (the company that provided the SCR system at Beta Steel); (2) Hitachi Zosen U.S.A. Ltd.; (3) Mitsubishi Heavy Industries America, Inc.; and (4) Wheelabrator Air Pollution Control, Inc., which IDEM evaluated in its BACT analysis. HES submitted a bid of \$17,336 per ton of NO_x removed, at 80% NO_x removal efficiency, including in its bid the costs of three components (a feed-forward ammonia control system, a data highway computer system for addressing variable furnace conditions, and a large refractory line plenum/duct) that, based on its experiences with the Beta Steel SCR, it believed necessary to compensate for the variability in SDI’s production process. The other three vendors reportedly “[r]efused to bid due to the technical implications associated with the large fluctuations in temperature and gas volume” at SDI’s reheat furnace. TSD at 17 tbl.

On the basis of the HES bid, among other things, SDI, the Union, and IDEM all engaged in detailed, line-by-line cost analyses for SCR installation at the proposed mill. SDI concluded that SCR would cost \$17,338 per ton of NO_x removed at 80% removal efficiency, the Union arrived at an estimate of \$5,399 per ton of NO_x removed at 90% removal efficiency, and IDEM, comparing SDI and the Union’s competing costs and attempting to draw reasoned conclusions therefrom, derived an estimate of \$14,044 per ton of NO_x removed at 80% removal efficiency. *See* ATSD at 20-27. IDEM therefore determined that SCR is not economically feasible for installation at SDI’s proposed mill. *Id.* at 32. IDEM also determined that SNCR and SCONOx are not technically feasible in this context. *Id.* at 28-29.

On appeal, COW contends that IDEM erred in its analysis of BACT for SDI’s reheat furnace, on the following four grounds: (1) SCR and SNCR are being used successfully at several European facilities, and IDEM should have considered those examples more thoroughly; (2) IDEM failed to evaluate the costs of SCR performing at different efficiency levels; (3) SCR design criteria on which bids were requested were not provided for public review, and the three components added by HES boosted total SCR cost unnecessarily; and (4) IDEM failed to consider the costs of SCR at Nucor Steel in Darlington, North Carolina. We address each of these arguments in turn below.

a. *European Applications of SCR and SNCR*

COW believes IDEM erred by basing an undue portion of its BACT analysis on the SCR experience at Beta Steel, a mill COW claims is plagued by serious design problems and thus is a flawed model for SDI. COW notes that under the *NSR Manual*, BACT analyses must include evaluations of technologies successfully demonstrated outside the United States. COW Pet'n at 17-18 (citing *NSR Manual* at B.5, .11). Pointing to materials collected by Dr. Fox, the Union's expert, COW argues that a steel mill in the Netherlands (the Corus mill) is successfully using SCR on two walking beam reheat furnaces that are "essentially identical" to SDI's proposed furnace and on one pusher furnace that is similar to the reheat furnace at Beta Steel. *Id.* at 18. COW also contends that a Swedish mill (the Avesta Sheffield stainless steel mill) is successfully using SNCR on two walking beam reheat furnaces that are "very similar" to SDI's proposed furnace. COW argues that these examples are "compelling evidence" that SCR and SNCR are technically and economically feasible for use on SDI's reheat furnace. *Id.* at 19. According to COW, IDEM erred by failing to collect more complete cost data about these mills under confidentiality agreements proffered by the Union, as well as by failing to document any significant cost differences between the mills and SDI's proposed mill. *Id.* at 19-20.

With respect to SNCR, IDEM argues that COW has not squarely addressed IDEM's SNCR analysis and thus has failed to carry its burden of showing that evidence in favor of using SNCR at SDI clearly outweighs evidence against it. IDEM Resp. at 16 n.21 (citing *In re Inter-Power of N.Y., Inc.*, 5 E.A.D. 130, 144 (EAB 1994)). SDI and Amici agree, pointing out that COW has merely referenced comments that IDEM has already answered and thus has not properly presented this issue for appeal. SDI Resp. at 26-27 n.16 (citing *In re SEI Birchwood, Inc.*, 5 E.A.D. 25, 27 (EAB 1994)); *accord* Amicus Br. at 18-20. For the reasons expressed by IDEM, SDI, and Amici, we deny review of IDEM's decision to reject SNCR in this context. *See, e.g., In re Hadson Power 14-Buena Vista*, 4 E.A.D. 258, 290 (EAB 1992) (review denied where petitioner fails to explain why permit issuer's response to comments is clearly erroneous).

Regarding SCR, IDEM points out that much of the substance of COW's arguments and underlying materials relate to the technical, and not the economic, feasibility of the technology. IDEM deems all such arguments irrelevant because it excluded SCR from further BACT review on economic, not technical, infeasibility grounds. IDEM Resp. at 17. IDEM notes further that as to the economic feasibility question, COW relies heavily on information submitted by the Union after the close of the public comment period on November 6, 2000. *Id.* at 18 (citing COW Pet'n at 18-19, which cites supplemental comments submitted by Dr. Fox on November 27 and December 22, 2000). IDEM asserts that it has no responsibility to review information submitted after the close of public comment and thus need not have considered these materials. *Id.* However, IDEM explains that it did nonetheless consider Dr. Fox's late comments but determined that the cost information contained therein provided little detail on what capital costs were considered, and thus it was unclear whether all necessary SCR costs had been included. ATSD at 32. Moreover, IDEM notes that the Corus mill's SCR system was subsidized by the government, that its baseline NO_x emissions are more than three times higher than SDI's, and that the mill's processes are less variable than SDI's will be due to the type of steel being manufactured (i.e., Corus' relatively uniform steel slabs versus SDI's more than 250 varieties of structural steel). IDEM Resp. at 18-19; *see* ATSD at 32. IDEM concludes that COW failed to show any clear error in its decision not to pursue the Corus example further than it did. IDEM Resp. at 19. SDI and Amici agree that COW's arguments fall short here, contending that "IDEM performed a more than adequate analysis of the Corus SCR examples, concluded that additional information would not be helpful and explained how the Corus costs are based on fundamentally different factors." SDI Resp. at 29; *accord* Amicus Br. at 14-18.

We agree that IDEM adequately investigated the Corus mill's experiences with SCR at its facility. In response to the Union's comments identifying the Dutch mill as a potentially useful source of information, IDEM contacted the mill and compared it to the SDI mill, finding a number of significant differences. *See, e.g.*, ATSD at 23, 25, 27, 31-32. COW now attempts to establish that the differences in

furnace variability IDEM identified between the mills do not actually exist. In reliance on Dr. Fox's comments, COW argues that SCR and reheat furnaces, regardless of product mix, usually have limited variability. COW Pet'n at 19 (citing Dr. Fox's November 6th and 27th comments). COW also claims that Corus' higher NO_x emissions baseline translates into higher capital costs for SCR and does not necessarily mean SCR would not be cost-effective at SDI. *Id.*

COW's arguments fail. As we explained in *SDI I*:

[A] petitioner cannot gain review of a permit merely by presenting an alternative theory regarding a technical matter. If the Board is presented with conflicting expert opinions, * * * we will "look to see if the record demonstrates that the [permitting agency] duly considered the issues raised in the comments and if the approach ultimately selected * * * is rational in light of all the information in the record, including the conflicting opinions."

SDI I, slip op. at 23 n.16, 9 E.A.D. ____ (quoting *In re NE Hub Partners, L.P.*, 7 E.A.D. 561, 568 (EAB 1998), *appeal denied sub nom. Penn Fuel Gas, Inc. v. EPA*, 185 F.3d 862 (3d Cir. 1999)). The issue of the SDI mill's large diversity of products and concomitant substantial process variability appears repeatedly in the administrative record and is acknowledged by several vendors (e.g., HES, Wheelabrator). *See, e.g.*, ATSD at 20, 27-32; TSD at 17-19 & attaches. B-2, B-3, B-5 (vendor letters). There is nothing in the record that supports the conclusion that IDEM was irrational in concluding that SCR vendors' opinions were entitled to greater weight than those of the Union's expert. *See* Union Comments at 60-61; Union Supplement at 3-4 (Nov. 27, 2000). As for the differing baseline point, COW has not provided support for its assertion that a higher baseline equates to higher capital costs. *See* COW Pet'n at 19. In the absence of evidence to the contrary, IDEM's position, i.e., that Corus' higher NO_x baseline means cost per ton of NO_x removed would be significantly lower at Corus than at SDI because more NO_x would be removed, appears to be reasonable. *See NE Hub*, 7 E.A.D. at

568; *In re Ash Grove Cement Co.*, 7 E.A.D. 387, 403 (EAB 1997) (parties seeking review of “quintessentially technical” issues bear heavy burden to establish clear error or other reason to grant review of permit agency’s decision).

In sum, we find that IDEM identified and documented in the record a number of differences between the SDI and European mills that led it to conclude their cost-effectiveness values could not reasonably be compared. COW has not pointed to anything in the record that would prompt us to conclude IDEM’s review of the European mills is clearly erroneous or otherwise warrants review. Review is therefore denied on this ground.

b. Control Performance Levels

At the public hearing on October 30, 2000, Ronald Van Mersbergen observed that in its revised BACT analysis, IDEM evaluated SCR with 80% control efficiency only and no other control efficiency levels. Mr. Van Mersbergen noted that the *NSR Manual* provides for parties to review a variety of control levels and concluded “the permit is deficient because we could have used as an option a control efficiency of maybe 50 or 70 percent” for SCR but did not. COW Pet’n at 20 (quoting Mr. Van Mersbergen’s statement). COW now argues that IDEM erred by failing to consider a variety of NO_x removal efficiency levels that could be achieved by SCR technology. *Id.* at 20-22.

IDEM points out that it responded to Mr. Van Mersbergen’s comment by observing that many SCR costs are fixed and thus a lower control efficiency would only tend to increase the cost of SCR per ton of NO_x removed, which would render the SCR system even more economically infeasible than it had been determined to be at 80% removal. IDEM Resp. at 19; *see* ATSD at 19. IDEM also observes that the Union itself had recognized that lower control efficiencies are generally less cost-effective. IDEM Resp. at 19 (citing Union Comments at 30, 55); ATSD at 19. In its response, SDI points out that the *NSR Manual* does not require IDEM to consider multiple control efficiencies but merely allows such consideration at the option of the permit agency.

SDI Resp. at 30 (citing *NSR Manual* at B.23-.24). For their part, Amici go into more detail, explaining that IDEM calculated the costs of SDI's SCR at an 80% performance level using the HES bid as its starting point. The HES bid actually estimated costs at a 90% performance level or 1.0 lb/hr, whichever is easier to achieve. Amicus Br. at 21 (citing TSD at 18 n.22). Amici then lay out IDEM's reasoning in settling on an 80% efficiency level, which IDEM documented in the administrative record.⁷ *Id.*; see TSD at 18 n.22; ATSD at 27-28.

COW has failed to demonstrate that IDEM clearly erred in deciding to analyze 80% removal efficiency only. According to the *NSR Manual*:

It is not the EPA's intention to require analysis of each possible level of efficiency for a control technique, as such an analysis would result in a large number of options. Rather, the applicant should use the most recent regulatory decisions and performance data for identifying the emissions performance level(s) to be evaluated in all cases.

* * * While the most effective level of control must be considered in the BACT analysis, different levels of control for a given control alternative can be considered.

⁷ IDEM explained:

The cost/ton amount of \$17,336 is for 80% NO_x control. The HES bid is for 90% control or 1.0 lb/hr, whichever is higher. Under normal furnace operations, the 90% control efficiency would not apply because the NO_x levels in the furnace exhaust will be too low. Thus, even if the SCR were working properly, 1.0 lb/hr of NO_x in the SCR exhaust will often be the maximum level of control and will be less than 90% removal. IDEM notes that Beta has never achieved 80% control with any consistency. Further, other states have conducted BACT analyses using SCR control efficiencies of 50%-70%.

TSD at 18 n.22.

NSR Manual at B.23-.24. Thus, while the guidance instructs permit authorities to evaluate the most effective level of control, it also contemplates that those authorities may exercise their discretion in reviewing less effective levels of control. As Amici note, “IDEM’s decision to calculate SDI’s SCR costs at an 80% performance level rather than at a 90% performance level was based on IDEM’s consideration of SDI’s furnace exhaust temperature, the performance levels for other SCR systems, and the Beta Steel experience. Based on these considerations, IDEM selected the 80% performance level as the most effective level of control.” Amicus Br. at 23; *see* TSD at 18 n.22; ATSD at 27-28. COW has failed to explain how this approach is inconsistent with the *NSR Manual*. Moreover, COW has not submitted argument or calculation showing how consideration of the less effective control levels would have led to a positive economic feasibility determination here. We therefore find no clear error or other reason to grant review of IDEM’s permit decision on this ground. *See, e.g., Ash Grove*, 7 E.A.D. at 403 (petitioner bears heavy burden to demonstrate clear error or other grounds for grant of review of highly technical decisions).

c. Vendor Bid Information

Next, COW alleges that IDEM’s BACT analysis is flawed because IDEM has not obtained from SDI the bidding instructions and details of SDI’s request for bids from the four SCR vendors. COW Pet’n at 22. COW notes that under the *NSR Manual*, design parameters must be submitted and, “[i]f the design specified does not appear reasonable, then the applicant should be requested to supply performance test data for the control technology in question applied to the same source, or a similar source.” *Id.* at 23 (quoting *NSR Manual* at B.35). COW contends that IDEM has not complied with this requirement. COW also targets the three modifications HES added to its SCR bid (ammonia control, data highway, plenum), purportedly to accommodate the operational fluctuations of the SDI reheat furnace, stating that these modifications comprise 35-38% of the HES bid yet are not in use “on any other SCR or in any other facility.” *Id.* COW believes the fact that other mills are using SCR successfully without these three special

components “is extremely strong evidence that these components are not needed.” *Id.*

According to IDEM and SDI, COW’s complaint regarding the bid information is a replay of comments submitted by Dr. Fox on behalf of the Union. IDEM Resp. at 20 (citing Union Comments at 28-29); SDI Resp. at 31. IDEM points out that the SCR design parameters were included in the TSD and thus were, in fact, available for public review. IDEM Resp. at 20; *see* TSD at 17-18 & attach. B-1; ATSD at 19, 22-23, 25-27. IDEM and SDI argue that COW has not identified any error in IDEM’s response to Dr. Fox’s comments and thus may not obtain review on this ground. IDEM Resp. at 20-21; SDI Resp. at 31-32. As to the three special components incorporated into the HES bid, IDEM posits that COW’s claim that other sources do not use them is not supported by the administrative record. IDEM explains that the three components may be identified by other names or descriptions (e.g., “retention zone” rather than “plenum,” “fast-response control system” rather than “feed-forward controls”), and as such are in use at other mills, and therefore contends that COW’s argument is without merit. IDEM Resp. at 21; *see* ATSD at 19. Moreover, Amici remind us that, as IDEM had explained in the ATSD, HES, not SDI, proposed inclusion of the three components in its bid based on its experience with the operational problems at Beta Steel. Amicus Br. at 25; *see* ATSD at 19.

We agree that COW’s arguments do not reveal clear error or other reason for us to grant review on this ground. As Amici point out, the *NSR Manual* specifies that control system design parameters, but not bid solicitation criteria, should be made available. Amicus Br. at 24 & n.14; *see NSR Manual* at B.32-.35. As IDEM notes, the SCR design parameters were published in the TSD, and the record also includes a justification for including each of the three additional components: i.e., the feed-forward ammonia control system will attempt “to respond to changes in NO_x load at the furnace outlet”; the SCR control system “will access the furnace control system via a data highway that anticipates changes in the furnace set points and tries to prepare the SCR’s operation for periods of highly erratic process conditions”; and the refractory lining “is required in lieu of fiber insulation to curtail catalyst particulate

loading.” TSD at 18; *see id.* at 16-18 & attach. B-1; IDEM Resp. at 20. In our view, IDEM considered and responded adequately to all comments on these issues, made reasoned decisions on the basis of the information before it, and properly documented its analysis. *See* ATSD at 17-32. COW has failed to counter IDEM’s explanations, so review is denied.

d. Nucor Steel

Finally, COW claims IDEM should have examined the design specifications, and any vendor responses thereto, for an SCR system required under a recent consent decree for Nucor Steel in Darlington, South Carolina. COW Pet’n at 23-24. IDEM contends that information regarding the proposed settlement was not available until after the public comment period closed and thus, under the permitting regulations, it had no obligation to consider such information. IDEM Resp. at 22 (citing 40 C.F.R. §§ 124.13, .18(a)-(b)). Moreover, IDEM notes that it nonetheless addressed the consent decree in its response to comments, explaining that the settlement would resolve an enforcement action and was not a BACT determination. *Id.*; *see* ATSD at 32. IDEM also observed that the settlement refers to SCR as a “pilot project” and sets a \$10,000 per ton of NO_x removal as the level at which the project would be economically infeasible. IDEM Resp. at 22; ATSD at 32. IDEM concludes that COW has not shown clear error in IDEM’s treatment of this issue. IDEM Resp. at 22. SDI and Amici concur with IDEM’s position, and Amici observe further that the consent decree does not even provide the actual design specifications for the SCR. *See* SDI Resp. at 32-33; Amicus Br. at 26-27 & exs. C (Nucor Consent Decree), D (Consent Decree attach. 5: Protocol for Evaluating SCR on a Reheat Furnace).

IDEM did not clearly err in evaluating the Nucor situation. Not only did the Nucor information come in after the comment period closed, but the information did not contain the SCR design specifications, let alone vendor responses, necessary for transfer to other applications. *See* Amicus Br. ex. D (Consent Decree attach. 5: Protocol for Evaluating SCR on a Reheat Furnace) (specifying that “As required by the Consent Decree, Nucor will evaluate the use of [SCR] on a new reheat furnace to

be installed at its Darlington, South Carolina facility. * * * Nucor will meet with SCR vendors to discuss the design of the SCR system. * * * Nucor will develop a request for quotation that will include a design for the SCR system, a price quote for the system, guaranteed NO_x removal efficiencies, and guaranteed ammonia slip values.”). Review is denied.

3. BACT Limits for NO_x and CO Emissions from the EAF

Moving on to the third remanded issue, involving the BACT limits for NO_x and CO emissions from the EAF, COW argues that IDEM abused its discretion by changing the permit’s deadline for interim compliance testing for NO_x emissions. COW Pet’n at 24-25. The original permit required stack testing within 180 days of startup to determine SDI’s interim compliance with the NO_x emissions limit, but the remanded permit extends that deadline to within 365 days of startup. *See* Permit § D.1.15(a)(1). In response to a comment questioning this extension, IDEM had stated:

During the comment period IDEM reviewed more permits for other similar sources required to utilize good combustion practices to control NO_x emissions. IDEM found that most permits for similar sources did not require interim limits. IDEM also found that generally, sources required to stack test within the first 180 days after startup did not show compliance with their limits; while sources which were given more time (usually more than 365 days) were able to show compliance with their limits. This indicates that the time necessary to ramp up production and gain enough experience to operate the system properly is more than 180 days. After reviewing these other permits, IDEM determined that extending the deadline for compliance with the interim NO_x limit would be consistent with other permitting decisions for other facilities using good combustion practices to reduce NO_x emissions.

ATSD at 34.⁸

IDEM and SDI argue that there is no legal authority requiring interim NO_x testing within 180 or any other number of days from startup. *See* IDEM Resp. at 23; SDI Resp. at 34; *see also* Amicus Br. at 28-29 (describing process for determining timing of compliance testing). We agree, and we also agree with these parties' arguments that COW is merely repeating comments rather than identifying clear error in IDEM's treatment of this issue. The administrative record shows that IDEM examined the issue of interim stack testing at a number of different mills and concluded that a longer period than initially chosen would better satisfy the goal of obtaining an accurate interim assessment of SDI's emissions performance. *See* TSD at 23-25; ATSD at 33-34; *see also*

⁸Amici explain:

As a general matter, compliance tests must be conducted during periods of representative operation. *See, e.g.*, 40 C.F.R. § 60.8(c). If SDI's EAF is not operating at normal representative operating levels during a compliance test, the results of that compliance test probably will not yield data useful for determining compliance during normal operations. EPA traditionally does not allow representative stack testing during non-representative time periods, such as startup periods, because facilities have fluctuating emission characteristics during these non-representative periods.

Unlike the other emissions at SDI, NO_x emissions from the EAF may take longer to normalize. NO_x can be formed in the EAF when atmospheric nitrogen passes through the arc between electrodes, in the water-cooled ducting, and at the natural gas burners utilized to heat cold spots in the EAF. With these various sources of NO_x from typical EAF operation, emissions may fluctuate significantly. Because the proposed SDI EAF will not utilize a control technology for NO_x, large emissions fluctuations during startup are inevitable. During the initial shakedown period, SDI EAF operators will adjust these complex furnace systems to reduce these NO_x emissions. That period of "shakedown" time will need to be comparatively longer than other pollutants such as CO and PM, which will both utilize control technologies and thus have fewer variables.

Amicus Br. at 28-29.

Amicus Br. at 29-30 (arguing that because a majority of the mills IDEM surveyed conducted initial stack tests 365 or more days after startup, IDEM's adjustment from 180 to 365 days is not clearly erroneous). COW fails to provide any specific reason for us to find IDEM's analysis clearly erroneous or otherwise deserving of review. Review is denied.

4. *Peer Review and Response to Public Comments*

As one last set of arguments, COW contends that IDEM abused its discretion "by not adequately addressing substantive comments made in the public record that pertain directly to issues associated with changes made to the permit." COW Pet'n at 26. COW asserts that IDEM: (1) must ensure the draft permit is subjected to peer review; (2) may not avoid its duty to collect and analyze information by claiming commenters' data are incomplete; and (3) failed to provide expert personnel to respond to technical questions at the public hearing.

IDEM responds by arguing that the first two points mentioned above were not raised during the public comment period and thus may not be addressed for the first time on appeal. IDEM Resp. at 24-25 (citing 40 C.F.R. §§ 124.13, 19(a)). IDEM also, together with SDI, maintains that there is no legal requirement that a draft permit be peer-reviewed or that a permit agency must respond to comments made at a public hearing during that hearing. *Id.* at 25; SDI Resp. at 35-36.

IDEM's and SDI's arguments are correct and must prevail in this context. Despite COW's lingering concerns about the role public comment has played in this permitting process, the fact is that public involvement has had a significant impact on the terms of the PSD permit ultimately issued to SDI. As mentioned above, IDEM made, in response to public comment, substantial changes in the configuration of the mill's meltshop and lead-related conditions and imposed NO_x and CO production limits to ensure SDI's continuous compliance with emissions limits. These changes are "a testament to the role of public participation in the permit process." *In re AES P.R. L.P.*, PSD Appeal Nos. 98-29 to -31, slip op. at 35 (EAB, May 27, 1999), 8 E.A.D. ___, *aff'd sub nom. Sur Contra La Contaminacion v. EPA*, 202 F.3d 443 (1st Cir. 2000).

COW has failed to carry its burden of demonstrating clear error or other reason justifying a grant of review on these grounds.

III. CONCLUSION

For the foregoing reasons, we deny review of all the elements of COW's petition. In accordance with 40 C.F.R. § 124.19(f)(2), the Regional Administrator of EPA Region V, or his delegatee, shall promptly publish in the *Federal Register* a notice of this final agency action.

So ordered.